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RESEARCH**

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No. 8

Canadian Cancer Problems and Cancer Research

By FREDERICK L. HOFFMAN, LL.D.,

Consulting Statistician, Prudential Insurance Company

IN its last analysis every disease problem is essentially one of local and individual concern. Data which collectively express a disease problem are at their best but of very limited local or individual application. This is especially true of the cancer problem, which is rarely resolved into its integral parts, as regards the different organs of the body affected by malignant disease. For while there may be easily much similarity in the cancer frequency rates of different countries, cities or towns, a detailed analysis of organs and parts will reveal a wide degree of variation. In this variation lies the secret of the circumstances which condition cancer frequency in particular individuals. Thus it is of relatively small importance that the cancer death rate of Ceylon, for illustration, is much lower than of European countries, while it is of the very first importance that cancer of the buccal cavity in that particular island should be extremely common, in view of the known fact that it is directly associated with the habit of beetle-nut chewing. No very material progress will be made in cancer control until the facts of the situation are subjected everywhere to critical and extended analysis. As far as I am aware no one has as yet attempted to correlate all the essential cancer facts for the Canadian Dominion, particularly as regards the different organs and parts of the body effected, and their variation in different sections of the vast Dominion.

Approximately there occur annually in Canada about six thousand deaths from all forms of cancer, equivalent to a rate possibly ten to fifteen per hundred thousand less than the corresponding rate for the registration area of the United States. The rate for Canada is less than the rate for England and Wales, but the relative incidence varies considerably for the different Provinces, and especially so for the different large cities, for which naturally the data are most reliable.

Address delivered before the Canadian Public Health Association, Montreal, June 8-9, 1925.

For the present purpose I have brought together, through the co-operation of local Health Officers, the cancer data for the last fifteen years for some sixteen Canadian cities, with an aggregate population of about 2,200,000. The compilation shows that the rate of increase was from 65, at the beginning of the period, to 98 per hundred thousand at the end. The increase, broadly speaking, corresponds to the increase of cities of similar size in the United States, nor are there any essential reasons why there should be pronounced differences, since habits of life, nutrition, racial composition, etc., are much the same.

But there are two significant facts concerning Canada to which I would call particular attention. The first is a decidedly greater frequency of cancer in the two principal cities of Canada on the Pacific coast, that is Vancouver and Victoria; the other is the decidedly lower rate of frequency of cancer occurrence among the French Canadian population of the Province of Quebec, particularly the cities of Quebec and Montreal. Here, in other words, we have two positive indications of the line of research most urgently called for as regards underlying causative factors, which it should not be very difficult to ascertain.

On other occasions I have frequently directed attention to the low rate of cancer frequency among our native *Indians*. There are no reasons for supposing that what is true of the Indian of the United States is not also true of the Indian of Canada. There are few more fascinating fields of scientific study than the racial predisposition or immunity of the different types of mankind to a large variety of diseases; but for no disease is this more true than for cancer, which is practically never met with among strictly primitive types, not in close contact with civilization. I, of course, am not unmindful of the many objections that can be urged against this conclusion; but in my own case I have been in extensive correspondence with physicians attached to Indian Reservations, and also with physicians, long resident among native races, in different parts of the world. I am absolutely satisfied, as the result of my personal investigation among the Indians of the southwest, particularly the Navajos and the Zunis, and among the Indians of Bolivia, that malignant disease is of extremely rare occurrence, while cancer of the female breast is practically never met with. Why this is so has never been properly explained.

It may not be out of place for me to touch very briefly upon the cancer death rate of *Japan*, which it will be agreed in a general way is probably as trustworthy as that of Canada or the United States.

In 1922 the cancer death rate of Japanese males was 70.4 per hundred thousand and of Japanese females 68.1 or 69.3 for both sexes combined. But for cancer of the stomach and liver the rate for males was 53.2, while for females the rate was 33.5 and for both sexes combined 43.4.

The rate for cancer of the female breast was only 2.0 per hundred thousand for Japanese women. Cancer of the oesophagus prevailed at the rate of 6.1 among males and 2.3 among females, or 4.2 for both sexes combined.

If we now contrast the foregoing with the available statistics for the Canadian registration area, which covers the period 1921-23 we have the following statement of facts. The male cancer death rate was 70.2 per hundred thousand, while the female rate was 86.0. The mortality from cancer of the stomach and liver was 31.5 per hundred thousand for men and 26.1 for women. The rate for cancer of the female breast was 13.2 for Canada against 2.0 for Japan. Since cancer of the stomach and liver implies a relatively high degree of diagnostic skill for its correct ascertainment, it is certainly significant that this form of cancer should prevail at the rate of 29.7 among the Canadian population, whereas the rate for the Japanese population is 43.4. Obviously it is not a question of diagnostic skill but of a higher rate of relative incidence, which can only be explained by the Japanese mode of life, as to which we know as yet very little that is of real value. But even granting that the Canadian rate is under-stated it will not be assumed that it is higher than for Japan, and in that case we would be confronted by the fact that in the two countries of widely dissimilar customs and ways of living, the frequency of cancer of stomach and liver, unquestionably directly related to dietary habits, prevails to about the same degree.

If we now examine certain statistics for the Island of Ceylon we shall find another interesting contrast. Combining the returns for the period 1918-22, I have calculated the cancer death rate of Sinhalese population at 10.2 per hundred thousand and of the Tamil population at 8.8. If this rate is broken up it appears that cancer of the buccal cavity prevails among these two races at 3.3 per hundred thousand for the first and 3.7 per hundred thousand for the last. Now cancer of the buccal cavity in Ceylon, as previously stated, is directly the result of beetle-nut chewing, which is widely prevalent. In Canada, where this habit is not practised, cancer of the buccal cavity among men is largely the result of smoking habits, and the prevailing rate among men in Canada is 5.0 per hundred thousand, or even higher than the buccal cavity rate, due to beetle-nut chewing, in Ceylon. Among the women in Canada cancer of the buccal cavity is very rare, prevailing at the rate of 0.8. In Ceylon, cancer of the stomach and liver among the Sinhalese prevails at the rate of 4.0 per hundred thousand, while among the Tamils the rate is very much less, or only 0.6. It goes without saying that the returns for Ceylon are probably more or less defective, and yet they confirm each other from year to year.

What significance should be attached to such conclusions is largely a question for those to decide who are primarily concerned with cancer research. But it is my profound conviction that no material progress will be made towards a better public understanding of cancer facts until data, like the foregoing, are subject to critical consideration and thoroughly understood. The public is continuously confused by announcement now of one cancer cause or cancer cure and now of another. There is a bewildering mass of alleged expert evidence, which does not bear examinations. There is a vast literature on cancer which is a mere repetition of obsolete observations, which should long since have been discarded. On the other hand there is much indifference to suggestions, well deserving of thoughtful consideration.

One of these suggestions has been advanced by Dr. J. A. Shaw MacKenzie, well known for his research on the blood, in relation to diagnosis and treatment. Certainly no one can discuss this practical phase of the cancer problem with Dr. MacKenzie without becoming convinced that the methods suggested by him are worthy of a trial. It would certainly advance materially the early diagnosis of cancer, if his conclusions should be supported by the facts of experience. The work of Dr. MacKenzie has entailed an enormous amount of effort and yet, in his own words "Much remains to be done." His blood test is not only useful for diagnostic purposes but is also feasible, by means of further refinements, to decide as to the latency of the disease after operation. A fairly extended account of Dr. Shaw MacKenzie's theory will be found in the Canadian Practitioner for March, 1924.

Sometime since there was brought to my attention a new theory of cancer causation, advanced by Lieut. Col. Hildebrand of England, who is of opinion that the true source of cancer energy is to be found in minute quantities of radio-active substances conveyed through modern water supplies, derived from deep sources as a guarantee of purity. I have been much impressed with the evidence brought forward by Lieut. Col. Hildebrand, and feel strongly that his ingenious theories are well deserving of extended consideration and the necessary scientific tests, in their support or contradiction. There certainly is nothing inherently improbable in the theory, and yet it seems to have been almost entirely ignored.

Arguments have recently been advanced regarding the inhibiting effects of lead on the human system, productive of a sort of immunity against tumor formation. This theory also cannot easily be set aside, but requires to be thoroughly tested. I am in a position to make the statement that a thorough examination of some 1,500 death certificates, all cases of chronic lead poisoning, by occupation and locality, did not in a single instance reveal cancer as a contributory cause of death. It

is the established practice to assign death certificates to the classification of chronic lead poisoning, wherever the fact is indicated, irrespective of whatever contributory diseases, primary or secondary, may have been present. In my investigation of chronic lead poisoning, perhaps two-thirds of the certificates gave collateral causes, or contributory conditions, bearing upon the death of the person, but as I have said before, in not a single instance was cancer or even a tumor formation referred to. I have also gone over the medical examinations of quite a large number of lead workers and I have not yet found a single instance of cancer among them. While it may be a doubtful choice to prefer death from lead poisoning to death from cancer, the facts of the situation may certainly be of great practical value, once they are understood.

It is only natural that hope should die slowly in the parasitic theory of cancer causation. It would certainly, if true, prove the easiest solution of what is obviously a problem of colossal proportions, but all the acceptable evidence on the subject clearly disproves the parasitic theory, which in itself, with a due regard to the nature of the disease and its manifestations, is opposed to all that we know of infective processes. Nor does it answer the question of origin to say that the cancer parasite is the cancer cell. The latter is always a lawless process of proliferation in conformity to biological laws which continue to defy our understanding. It has not improperly been said by Walker, "That there are nearly as many different cancer parasites as people who have claimed the discovery but that it is probably not going too far to state that at the present time, no trained and competent observer believes in any particular parasite, except the one he has himself discovered." Of such discoveries there is apparently no end, but it is a waste of time to discuss findings clearly opposed to the facts of the situation.

Of real value, however, are the observations by Dr. Willy Meyer, who has brought together a large amount of evidence, clearly proving that a variety of parasites in the human body may give rise to local irritation and to the subsequent development of malignant tumors. Any one desirous of pursuing this line of thought cannot do better than to read Dr. Mayer's paper, contributed to the proceedings of the American Society for Cancer Research.

Gradually the facts of the situation are being brought together by those competent to deal with a highly complex material, much of which is of a statistical nature. Foremost in this respect attention may be directed to what is being done by the Cancer Committee of the Health Section of the League of Nations, the organization of which took place, I think, in September, 1923. An important report upon progress was made by this committee at its Rome session, held in May, 1924. The work of the committee has wisely been concentrated upon cancer of

the breast and cancer of the female genital organs. It is also limited to three countries, or respectively, Great Britain, the Netherlands, and Italy. It would be premature to discuss the findings of this Committee, which as yet are entirely tentative. Only those who are familiar with statistical investigations can fully appreciate the magnitude of this undertaking.

In 1922 I took occasion to present the facts of the Pacific Coast cancer situation to the public, during a meeting of the American Medical Association, held in San Francisco. As the result of that presentation a San Francisco Cancer Survey was organized, which has since and for control purposes, been made to include a number of other cities, particularly New Orleans, Chicago and Boston. A preliminary result upon this investigation has been published. A further report will shortly be issued and present more important conclusions. The investigation consists primarily of a painstaking analysis of some 20,000 cancer death certificates, in some ten different communities. This was made possible through the co-operation of local Health Officers and the use of the standard death certificate, which is much more complete than the fundamental cancer death records of European countries. The investigation includes the study of living cancer patients, on the basis of a questionnaire, of which thus far about 750 have been filled out by persons qualified for the purpose. The analysis of this material has not yet been completed, but tentatively certain findings may be presented for preliminary consideration.

The first question which received consideration, in connection with my San Francisco survey, was the average age at death and the distribution of deaths by single years of life. According to my data, covering a period of five years, the average age at death for both sexes was 57.7 years, or respectively 58.2 years for males and 57.1 years for females. The age distribution indicates a fairly normal population, with a slight tendency towards a larger proportion of population and deaths at ages over fifty, but in this respect San Francisco ranks below Los Angeles, which has a somewhat lower death rate from cancer than San Francisco.

The next question was the relation of residence in San Francisco and California. The average duration of residence for both sexes was 22.3 years for San Francisco and 33.3 years for California.

The third question was the precise organ and part of the body affected, extending to many matters of detail, not covered by the International classification, which is generally restricted to six groups. Before data of this character could be utilized, it was necessary to extend the investigation to a number of other cities, and this has been done for New Orleans, Buffalo, Chicago, Boston, Rochester, Minn., etc. The forthcoming results should prove of exceptional interest and emphasize

the wide disparity in the distribution of particular cancerous affections in different parts or sections of the country.

Other facts ascertained concerned the proportions of patients dying in hospitals, the proportion having been operated upon previous to death, the various methods of diagnosis and the proportion of deaths coming to autopsy.

With this and other matters before mentioned, I proceeded to an analysis of the local distribution of cancer deaths by wards and blocks of the entire city of San Francisco. I was fortunate enough, in this connection, to secure the co-operation of the Census office, which furnished population returns for minor civil divisions or election and assembly districts, permitting of the calculation of rates of incidence, visualizing the local concentration of cancer cases in particular localities.

The living cancer cases in San Francisco, to which I have thus far been able to give attention, number about 500. The questionnaire covers a large number of questions, including the fecundity of married women, the dietary habits, the physical condition, the incidence of constipation, the use of laxatives or purgatives, the coincidence of other diseases, particularly of diabetes, appendicitis, gastric ulcers, gall stones and rheumatism. The surgical phase of the inquiry covers such matters as previous serious operations, radium treatment, caustic treatment, etc. Regarding all of these matters the forthcoming reports will reveal a considerable amount of new information, the value of which is enhanced by control data for other cities, particularly for Newark, N. J., Boston, Mass., Buffalo, N.Y., and Washington. This phase of the investigation is only as yet in its beginning, and not quite a thousand cases have thus far been collected.

Aside from the foregoing I have been able to utilize a large amount of information collected through the co-operation of a number of Insurance Companies, a few years ago, but not heretofore made public. That information, however, is limited to cancer of the buccal cavity in men and to cancer of the breast in women.

The San Francisco questionnaires, in many cases, contain valuable additional or supplementary clinical notes, derived chiefly from hospital records, which will be given as far as practical in detail in the forthcoming reports.

Returning now to the cancer mortality of Canada, which is really the main subject of my present discussion, I would first call attention to a special return furnished through the kindness of the Dominion Statistician, Mr. R. H. Coates, giving cancer mortality of Canada for the last four years, by months. I desired this return for the particular purpose of illustrating the monthly incidence of cancer and the further trend towards an increase, during the last six months of the period,

compared with the first. The results are given in consolidated form, in the table below, which, however, has not been corrected for the varying length of the month, which, however, is easily possible if greater precision is desired.

MONTHLY INCIDENCE OF CANCER IN THE DOMINION OF CANADA
1921-1924

Months	Deaths	Months	Deaths
Jan.....	1695	July.....	1712
Feb.....	1604	August.....	1781
Mar.....	1685	Sept.....	1713
Apr.....	1698	Oct.....	1710
May.....	1739	Nov.....	1708
June.....	1651	Dec.....	1764
	—		—
	10072		10388
	—		—
Grand Total.....			20460

According to this tabulation there occurred:

- 4984 Cancer Deaths during the first three months.
- 5088 Cancer Deaths during the second three months.
- 5206 Cancer Deaths during the third three months.
- 5182 Cancer Deaths during the fourth three months.

It, therefore, clearly indicates that the frequency of the disease exhibits no evidence of periodicity, which would be certain to occur if the disease were of a parasitical origin. During 1924, separately considered, there occurred during the first six months 2,632 deaths and during the last 2,727 deaths, suggestive of a further upward trend in the frequency of the disease.

Considered by single years there were 4,826 deaths during 1921, equivalent of a rate of 75 per hundred thousand; during 1922 there were 5,118, or at the rate of 78; during 1923, 5,157, or at the rate of 82, while during 1924 there were 5,359 deaths, or at the rate of 80 per hundred thousand of estimated population. The population estimated is for the registration area only, and not for the entire Dominion. In 1924 this population was 6,734,700.

Through the courtesy of local health officers of the principal Canadian cities I have been furnished with cancer statistics since 1910, to the end of 1924. For certain cities, however, the returns are not entirely complete. According to this tabulation the cancer death rate of Canadian cities, with an average population of about two million, has increased from 65.2 in 1910 and 58.6 in 1911 to 98.1 per hundred thousand during

1924. There has, therefore, been a striking increase in cancer frequency in Canadian cities, corresponding to the increase in the cities of the United States.

Considering the returns for Canadian cities by periods of years, I find that during the five years ending 1914, when the average cancer death rate was 66.6, there was only one city, Halifax, which had a rate in excess of 100 per hundred thousand. In the five years ending with 1919, with an average of 79.2, there were three cities, or respectively, Halifax, Vancouver and Victoria; during the last five years, ending with 1924, when the average cancer death rate was 93.2, there were six cities with rates in excess of 100 per hundred thousand, or respectively, Edmonton, Halifax, St. John, Toronto, Vancouver and Victoria. It is significant that the highest rate for any Canadian city, at the present time, should be for Victoria and the next highest for Vancouver, or respectively 159.2 and 131.5, for it is precisely on the Pacific coast of the United States that we also meet with the highest cancer death rates, in practically all the large centres of population.

A further and still equally striking contrast is shown by the relatively low cancer death rates of Montreal and Quebec. The average rate for the latter city has been 64.3 and for the former 79.8. The rate for Ottawa is also relatively low or 88.4. The only conclusion that can be drawn from these statistics is that the French Canadian population is decidedly less liable to cancerous affections at the present time than those Canadians of English origin. The statistics for the latter conform to the corresponding statistics of Great Britain, which also show a heavy cancer incidence and a considerable increase in the cancer death rate during the last ten years.

In view of the foregoing, it would seem that the subject is one of profound interest to the Canadian people. The annual loss of life from malignant tumors, in the whole Dominion of Canada, at the present time, may be placed at approximately 6,000. Of this loss a not inconsiderable portion is unquestionably preventable, in the light of our modern knowledge regarding the supreme importance of the time factor, in determining a fatal issue. It is not going too far to say that probably 80 per cent. of the cancer cases, which at the present time receive operative attention are relatively in an inoperable condition. There are probably not far from 500 deaths from cancer of the breast in the whole Dominion of Canada each year, of which half would be needless, if the time factor had received proper consideration. There are about 250 deaths from cancer of the buccal cavity, of which half would be needless had an early operation taken place, instead of the case going largely by default. The appalling situation, at the present time, may be summed up in the three words, apathy, indifference and

fear; apathy, on the part of the medical profession, which counsels delay in operative treatment and permits the only opportunity for successful treatment to slip by; indifference to proper methods of treatment and reliance upon alleged cancer cures or forms of cancer treatment, which do not bear analysis; fear of a fatal termination when the majority of cases might have had a successful outcome, provided they had been treated during the early stage of the disease. Once that cancer is advanced sufficiently to have developed into metastases, the prognosis is practically hopeless.

Hence the urgency of intelligent methods of cancer education, applicable to both the medical profession and the laity. This will require strenuous efforts and the necessity of a vast amount of voluntary co-operation, which at the present time is much more urgently required than microscopical or other research into the practically hopeless realm of cancer causation.

In the light of many years of patient inquiry, I am convinced that whatever may be the results of cancer research, they will not materialize into the discovery of a single cancer cause. Cancer is a process rather than a disease, manifesting itself under such a large variety of conditions, that it seems a foregone conclusion that a multitude of such conditions, rather than a single cause, is operative in producing cell proliferation, which constitutes the sum and substance of malignant tumor formation. What is most needed at the present time is evidence that will assure the public of the value of early operative treatment, based upon carefully gathered post-operative results. What is further needed is the evidence derived from a study of local conditions, visualizing the cancer problem in its essential elements for the information of those who require a better understanding. Much of this information must be conveyed to the public by word of mouth, rather than through the printed page. Hence the practical value of cancer control measures, resting upon conservative methods of public agitation, always sustained by an appeal to the facts. Cancer in a broad sense cannot be prevented, certainly not in the case of vast numbers, who are at the present time pre-doomed to die from this most dreadful affliction. Control measures aim at reducing the cancer death rate, as the result of the earliest and most qualified method of treatment, with the absolute assurance that in any event an appreciable prolongation of life will be secured.

Every Doctor a Health Officer*

By GEORGE E. VINCENT,

President of the Rockefeller Foundation

ALAYMAN has his uses in a professional gathering. His ignorance gives the expert audience a gratifying sense of superiority, and sometimes he stumbles by happy accident upon a suggestion, not wholly preposterous.

It is my good fortune to see a great deal of doctors. During the last five years I have met members of the profession in twenty-five different countries from the Far East to the Near East. From such associations one cannot fail to be impressed by not only differences but uniformities. Various countries are at different stages of development. Many of them are confronted by the same problems and are seeking solutions. The success of one nation may easily be instructive to other lands.

Just now I am very keen about one of the smallest countries of the world that illustrates the difference between bigness and greatness. Denmark is a shining example of what racial homogeneity, intelligence, co-operation and sound social organization can accomplish. Medically, Denmark is highly efficient. Her general death rate is about equal to ours. The maternity mortality in child birth is less than half that of the United States.

These results seem to be accomplished with little of what we call the machinery of preventive medicine. There is only one full-time public health officer in Denmark. There are no "clean-up" weeks or "tag days" or sales of seals or vociferous campaigns of education.

All this is a little disconcerting. One hesitates to believe that the less clamour about public health the lower the death rate. So we sent a man to Denmark to find out what was going on and how results were brought about. The report was detailed and fascinating but was summarized into a sentence: "In Denmark every doctor is a public health officer, and every public health officer is a doctor."

This is a striking statement which deserves study. It seems to attack our pride in the mechanism of public health which perhaps is not wholly unlike our vanity about our fire departments. We have actually boasted about these without realizing that the very need for them is a national disgrace. When we build as substantially as they do in Europe, our reliance upon elaborate apparatus will be as little as it is on the continent.

*Reprinted from the Long Island Medical Journal.

Abstract of an address delivered before the Medical Society of the County of Kings, May 19, 1925.

In Denmark most of what we are continually insisting on for the protection of the public health is a part of the accepted tradition and routine of daily life. Thus, all engineering that involves public water supplies is, as a matter of course, sanitary engineering. Cleanliness is a national habit. The reporting of communicable disease is a matter of course. The appropriate measures of control are applied by recognized authority to which an intelligent population readily submits.

To say that every doctor is a public health officer and every health officer is a doctor is not to affirm that official appointments include the entire profession. It seems that the medical profession of Denmark accepts its social responsibilities and that the Danish people respect and trust the medical profession. As a matter of fact, in every country the doctors are an essential part of the public health mechanism. Where do we get our vital statistics? Obviously, from the diagnoses of the medical profession. Just in proportion as doctors are competent to recognize disease, conscientious in reporting communicable maladies, and diligent in instructing their patients, the vital statistics, the control of diseases, and the response of the public to guidance will be on a high level.

But the meaning of public health is being widely extended. The limits of public authority are coming to be recognized. There are many diseases which contribute to the general death rate that cannot be controlled in any true sense of the word by public health authorities. It is in the wide field of personal hygiene that the doctor becomes a public health officer in a new and most important sense.

This brings us to the question of what is going to happen in the future to the medical profession. There can be no doubt about the pressing character of this question. Experience in the United States and in other countries is unmistakable. There are certain demands which the public makes more and more insistently. If these can be met by private initiative, so much the better; but if the medical profession fails to recognize its opportunities, the politically organized community will sooner or later undertake the tasks which you hesitate or decline to assume.

Under modern conditions a serious illness may be a calamity to a family which lives on a narrow margin above its daily requirements. There is an insistent demand for some way of distributing costs of illness over large population groups. In England and Germany the state has assumed responsibility for insurance against sickness. In Cuba 250,000 people are organized into hospital associations which for \$2.00 a month guarantee medical and hospital care. Great industries are providing similar services in return for a small percentage deducted

from the pay roll. Commercial insurance companies are providing protection against the heavy burden of serious illness and disability.

All these plans affect the medical profession. They tend in various ways to encroach upon its opportunities and livelihood. Some of them represent a real danger to the growth of scientific medicine and the efficiency of doctors. For example, the Cuban hospital societies have so monopolized medical services that there is reason to fear that the medical profession will cease to attract the best candidates, and fail to provide stimulating opportunities for development.

Let us look for a moment at the present situation in terms of doctors and the social groups whom they serve. There are three factors which, aside from qualities of personality, enter into medical service, namely, specialized skill, access to laboratory and hospital resources, and organization of the relation to other medical men.

If we apply these criteria, we see that the rich and well-to-do are served by consultants who have a high degree of specialized skill, who rely chiefly upon their own private facilities for diagnosis and who are only slightly organized in relation to other practitioners.

On the other hand, the poor are cared for by doctors who offer a considerable degree of specialization, command the resources of hospitals and dispensaries, and are organized into institutional staffs. If any distinction were to be made, perhaps it would be safe to say that aside from certain conveniences and luxuries, the poor get even better service than the rich.

This leaves, however, perhaps 80% of the population in the hands of the vast majority of the medical profession who have a minimum of specialized skill, slight access to diagnostic and therapeutic resources, and practically no organization at all. How long is this state of things going to continue? What are the tendencies? Is it possible to make any predictions? Most important of all, what is to be the fate of the general practitioner?

In some quarters it is predicted that he will disappear. The overshadowing prestige of the specialist, the encroachments of preventive medicine, the growth of health insurance and various forms of institutionalized medical care are sure, it is said, to rob the general practitioner of his livelihood.

To be sure this danger in the United States is not in all respects so imminent as in the leading countries of Europe. We have reduced the amount of typhoid and malaria, are closing in on diphtheria, and making progress with other communicable diseases, but our smallpox holds out considerable hope. If you will examine the periodic reports issued by the Health Section of the League of Nations, you will see that while nearly all the leading countries of Europe usually report the complete

absence of smallpox, the United States sustains its reputation for doing things on a large scale. For example, the last report for a month in Russia was 788 cases, but for the United States for the month beginning February 7, 1925, there were 4,272 cases.

So far the outlook for the general practitioner in the United States is still cheerful. You cannot fool an intelligent people like the American public with agitations in behalf of vaccination.

There is another obstacle which the general practitioner must face. I hope your arteries are in perfectly sound condition as I mention social medicine. More and more doctors are being paid salaries to take care of groups of people. This tendency is likely to continue. It will take on various forms, but there is a demand and this demand will be met.

In spite of the tendencies which I have mentioned, the general practitioner is still here. I believe his disappearance would be a calamity. I cannot think of anything that would be much more serious from the standpoint of social welfare than the gradual fading away of the well-trained, conscientious, human, friendly general practitioner.

Of the need of him there can be no doubt. One of his many duties is to protect the patient against the specialist. It is his business to know his patient thoroughly, to understand his physical condition, his mental characteristics, the conditions of his family and social life. Such a man is more than a doctor. He is a friend, a counsellor, an expert and sympathetic interpreter. He knows when to bring in the specialist, and when to keep him at a distance.

It is sometimes suggested that the general practitioner is all right for the country, but that he is not needed in town. This seems to me a serious fallacy. There is no reason to believe that the poorly trained professional people go to the country. They are safer in the city. They are much less likely to be detected. It takes a good and resourceful doctor to hold his own in the country. In the rural community there is a publicity that is extremely searching. The idea that an inferior type of medical education will fit men and women for rural practice is unsound and misleading.

If the general practitioner holds tenaciously to the idea that his chief function is to patch up people after they are broken down, I fear that he is going to have a hard time; but if he comes gradually to look at his job in a new way, if he thinks of himself and is regarded by the community as primarily a counsellor of health, if he is going to discover and deal with diseases in their incipient stages, if he is going to specialize on diagnosis and become an expert in personal hygiene, then he seems to have a long and inspiring vista of satisfying work opening up before him.

There is no denying that such a change of attitude will call for a good many modifications in medical education and in preparation for

practice. Very few doctors are now competent to give advice about food, exercise, and other features of personal hygiene. Here is a whole field for research and education.

The Association to which you belong is to be congratulated upon its leadership in this new field. Think of it! You have actually been giving health examinations to your own members! This is almost revolutionary. What you have done is attracting attention throughout the country. You are pioneers and deserve credit for your enterprise and courage.

You will, I am sure, follow gradually to their logical consequences the implications of these health examinations. You will urge the medical schools to provide adequate training in diagnosis. You will encourage research in nutrition, exercise, and mental hygiene. You will use your influence to put the work of the health counsellor on a higher plane of scientific knowledge, and the practical application of this to individual well being.

Then there will have to be some readjustment of economics in adaptation to the new system. The health counsellor will have to accept an annual retaining fee, and with that assume the responsibility for taking the initiative in frequent examinations of his clients.

I know a doctor in a western city who was also an ornithologist. He tried to retire as a general practitioner and become a professor, but the families who relied upon him made a clamorous protest. It was finally arranged that for a fee of \$250 a year each he would look after twenty families. This he has been doing with great satisfaction to his clients. To a layman this seems a reasonable and sound scheme. I sincerely hope it is not unethical.

Some such plan, it seems to me, is essential if the health counsellor idea is to succeed. The obligation to take the initiative in examinations and advice must be put on the practitioner. Otherwise he would be open to the suspicion of drumming up business. If the function of the general practitioner as a counsellor of health can gradually come to be recognized both by the profession and the community, and if some system of economic return which puts a premium on the preventive function of the physician can be worked out, there seems to be reasonable hope that the general practitioner will not so much be rescued from disaster as given a more useful, a finer and much more satisfying part to play in our social order.

I am merely a layman. I know you will not be offended by anything I have said. I have allowed my enthusiasm more range than I would if I were addressing a less scientific audience. I know how able you are to shed every suggestion, however practical.

So I am confident that I have done nothing to shake your faith in the established order. Who knows, that one or two things that I have said may not later, in a subtle, surreptitious way, rise into your consciousness and receive slight consideration? With that almost pathetic thought I leave you to your cogitations.

Progress in Public Health

By JOHN W. S. McCULLOUGH, M.D., D.P.H.,

Chief Officer of Health, Ontario

SIR GEORGE NEWMAN, the Chief Medical Officer of the Ministry of Health, England, after tracing the progress of public health during the last fifty years asks the pertinent question, "What has been the result?" His answer is,

(1) *A decline in the death-rate.* In 1871-80 it was 21; in 1924 it was 12, and in the same period the infant-mortality rate, a most sensitive index of national health, was brought down from 149 per 1,000 births to 75, or expressed in another way, the expectation of life for every child born in Britain to-day is approximately 12 years longer than that of its grandfather.

In Glasgow in 1870-72 the male infant born in that city had an "expectation" of 31 years, which in 1920-22 had been raised to 48 years, and the female infant had risen from 33 to 52 in the same period.

(2) *There has been a reduction in sickness and invalidity* from certain diseases. In 1875, enteric (typhoid) fever accounted for 370 deaths in each million; last year this rate had fallen to 12. In the South African War the incidence of typhoid was 28.5% of troops; in the late war, 1%. In 1875 there were 1,500 deaths in England and Wales from typhus; in 1924 there were but 5. The tuberculosis death-rate per million in 1840 was 3,189; in 1875 it was 2,313; in 1924 it had declined to 801. Smallpox in Great Britain a century ago was a national scourge; to-day it is the perquisite of those, who, neglecting vaccination, elect to have it.

In speaking of the trend of preventive medicine to remote countries, Sir George effectively quotes Kipling who says:

"Smote for us a pathway
To the ends of all the earth."

Preventive medicine has opened empires by its control of disease, of the tropics. The prevention of famine, by the adoption of irrigation, scientific transportation and preservation of food, and the control of diseases such as malaria, of yellow fever, of plague, of cholera and of sleeping sickness, has opened the otherwise uninhabited tropics to trade. In the Federated Malay States, in India, in Panama, and in other tropical regions, the scientific application of public health knowledge has made, for habitation, progress and comfort, places heretofore but the grave of the white man.

Turning to the future the Chief Medical Officer refers to the enormous toll of life taken by the respiratory diseases, organic heart disease, cancer, nervous diseases, tuberculosis and influenza, to the loss of life in childbirth of mothers and to the annual deaths of 50,000 infants in their first year. These and the 23 million weeks of lost work due to illness, demand increased interest in and statesmanlike effort for the further reduction of the sickness, poverty and death due to preventable causes.

How does the progress in public health just recited compare with that of Ontario.

Any concerted effort in public health began in Ontario in 1882, when the first Public Health Act was passed and the Provincial Board of Health established.

There are no reliable records of the general death-rates nor of infant mortality previous to 1900, but the present general death-rate, viz., 11.8 (1923) compares favourably with that of England, and our infant mortality rate of 113.1 (1900) is now (1923) 84.9. The tuberculosis death-rate has dropped from 148.6 (1900) to 65.6 (1923).

In 1910 the typhoid death-rate was 50.3 in cities; it is now (1924) 2.5. The smallpox death-rate of Ontario is negligible, and there is a steady decline for years in the deaths from most of the preventable diseases.

Just as in England our deaths of mothers in childbirth, in infants under one year, from cancer, organic heart disease and influenza, range altogether too high, and the worker loses, because of sickness, periods of time which contribute largely to the poverty of his family. Much of this sickness is preventable.

The question *What of the future?* is as timely in Ontario as it is in England. There the Chief Medical Officer lays down three fundamentals for the successful prosecution of public health, viz.,

- (1) A new local unit of sanitary government *
- (2) Effective coordination of medical services
- and (3) Public Education in Health.

(1) *A new local health unit.*

There is nothing so greatly needed in Ontario as the establishment of whole-time health units and the abolition of local health administration by small municipalities. *The real basis for local health administration is a competent organization constantly on the job in an area of suitable size of population and financially able to bear the cost.*

The need for this basis must be as plain as a pikestaff. Competent management is the essential factor in any business, and neither public health nor any other business can show results unless properly managed. The small villages and towns and the rural townships are, by them-

selves, financially unable to bear the cost of a proper health service. What is the obvious remedy? They should combine for this purpose, the combination being a county or part of a county, or, where adjacent counties are small, two might be united for health purposes. This matter of union is of such importance that every effort in public health, governmental and voluntary, should be directed to this end. Many agencies besides government, such as insurance companies, voluntary health boards and voluntary workers, are dribbling away large sums of money on this, that and the other public health project without much lasting effort. If all this money were devoted to the concerted effort of uniting the small municipality health boards into combinations financially able to carry full-time health organizations, we should have before many years all over the province (and the same applies to the other provinces of Canada) sufficient local organizations of such a character as to ensure that, day in and day out, the business of public health was being satisfactorily carried on.

(2) *Effective co-ordination of Medical Services.*

The need of this is quite as apparent in Ontario as in England, but as far as co-ordination of the medical services in the aid of public health is concerned, nothing of any moment can be expected while the local health officer remains a part-time practising physician in competition for practice with his fellows in the same neighbourhood. All of them know that, as a rule, the medical officer of health is no more an authority on public health than any of themselves. If, on the other hand, as one sees in the cities with a full-time health service, the medical officer of health is a trained man and is not a competitor in the practice of medicine, he at once gains the support of the local profession; and the right sort of medical officer of health can do much in enlisting the support of his medical friends, in public health work. So that effective co-ordination of the medical services depends largely on the establishment of a full-time health service.

(3) *Education of the Public.*

Any public health scheme which fails to provide for education of the public in these matters is, if not doomed to failure, bound to be slow of advancement.

But who is to educate the public?

Obviously the government cannot reach to the uttermost parts of the 407,000 square miles of territory embraced within the boundaries of Ontario. Any education of this character now being carried on is done chiefly by the Department of Health of the government or by the

eight full-time municipal health organizations now existent. To be done effectively the work of *public health education* must be initiated and carried on by the local health unit with such direction and assistance as may be afforded by government. So that it at once appears that successful local administration, co-ordination of medical services and public health education all depend upon *the union of municipalities*, so as to provide an area on suitable size, population and financial stability for public health purposes.

If this were accomplished, the experience of all countries where this plan has been adopted is that there is satisfactory advancement in public health measures, co-operation of the medical profession, and rapid enlightenment of the public in the importance and need of sanitary and hygienic conditions; the incidence of disease and the death-rate are lowered; there is protection of the mother and her baby; and, because of less sickness, there is greater comfort and happiness, and less poverty among the public.

The Organization and Operation of Child Guidance Clinics

By V. V. ANDERSON, M.D.—Director

Division, for the Prevention of Delinquency, of the National Committee for Mental Hygiene, New York City

WHAT IS A CHILD GUIDANCE CLINIC?

It is an organization that seeks to bring to the study, training and treatment of problem children whatever medicine, psychiatry, psychology, education and social case work can offer. These contributions from specialists in different fields are combined in a well-rounded, co-ordinated unit, known as a child guidance clinic, that seeks to deal—not only with the child—but with situations in his environment that have contributed to make him what he is. In a child guidance clinic, no part of the study, physical, psychiatric, psychological, educational and social is separate and distinct unto itself. Each part goes to make up a total and complete picture of the individual child and his adjustments to life. They each contribute to a properly rounded programme of rehabilitation and treatment.

WHAT IS THE PERSONNEL OF SUCH A CLINIC?

The staff is composed of psychiatrists, psychologists, psychiatrically trained social workers and clerical assistants. The director of such a clinic is a physician who has specialized in psychiatry with particular emphasis on childhood problems.

HOW SHOULD SUCH A CLINIC BE FINANCED?

Inasmuch as the social agencies of a city, the public schools, the juvenile court, as well as the entire community would profit from its services, such a clinic should be financed out of the budgets of the Board of Education, Community Chest, Juvenile Court and Public Welfare Department of the city. The joining of all of these groups in a common undertaking usually makes for greater success. However, it is desirable, wherever possible, to secure private support, as this removes the enterprise—particularly during the early years of its development—from any political entanglements and general administrative difficulties.

There are serious objections in placing such a clinic in any one department of the city's activities, inasmuch as it often limits not only the resources of the clinic in undertaking a far-reaching campaign for

childhood problems, but actually restricts its services to a certain group of children.

Above all things, should the organization of the clinic be such as to invite parents of all classes to voluntarily bring their children for study and guidance. And, inasmuch as the treatment end of the work is the reason for the existence of the clinic, it should be unhampered by entanglements that would prevent it from using any valuable agency in the city in its follow-up and treatment work.

WHERE SHOULD IT BE LOCATED?

It is important that the clinic be centrally located, having definitely in mind accessibility and service. This means within easy distance of public schools and social agencies. The item of transportation is to be thought of when it is borne in mind that social workers, school teachers, and above all,—parents,—are daily in consultation with the clinic.

Then there is another matter that must be considered in connection with the study, and particularly the medical treatment of clinic cases. That is, the accessibility to laboratory and hospital facilities for specialized laboratory examinations—such as X-ray, blood, etc.

In the long run, the most vital point to be considered as to location is placing the clinic within easy reach of school teachers, parents, social workers and those daily dealing with the child.

WHAT TYPE OF CHILDREN SHOULD RECEIVE THE SERVICES OF THE CHILD GUIDANCE CLINIC?

It is important that such a clinic be limited to no particular types of children. It should be a childhood enterprise—open for the study and advice in the case of all problem children—whatever the problem may be—whether it be that of a child with superior abilities, whose parents wish guidance in maintaining the mental health of the child and mapping out a programme for his best development; or a pre-school child who has begun to develop habits that later become injurious to his mental health; or a school child that manifests outspoken conduct disorders or educational maladjustments; or the little fellow who has developed a mental conflict that later on may result in a mental breakdown; or the child whose personality make-up is such as to insure difficulties later in life; or the ward of a child-placing agency that is to be placed in a foster home; or an outspoken case of delinquency from the juvenile court. Whatever the problem may be, if it relates to the better adjustment of the child to life situations, then a child guidance clinic might very well be of service to those responsible for the child's welfare. This thing is certain—that such a clinic is not concerned purely with detecting feeble-mindedness and psychopathic conditions. It is interested

in the child, whatever his problems may be. Certainly those children who can benefit most by its aid have normal intelligence, but show something wrong in their interests, or attitude, or behaviour, or personality make-up, or are being constantly subjected to environmental influences that prevent the wholesome and healthy development of character and personality.

WHAT METHODS ARE EMPLOYED BY THE CLINIC TO ACHIEVE ITS PURPOSES?

Each child receives a careful physical and mental examination, together with a thorough study of his environment. There are four main divisions of work, in connection with the study of a given case. (a) Social, (b) the physical, (c) psychological and educational and (d) the psychiatric. It requires from three to five days to make the initial study of a given case before a report can be made to the referring agency. Sometimes a much longer period is required, owing to the difficulty in getting an adequate social study completed. After all the information is in, a staff meeting is held, at which all of the important facts bearing on the problem in hand are brought up for consideration and analysis, and a report of the findings made to the referring agency. This report not only contains a summary of all the facts discovered by the clinic in its four departments, but a plan of treatment is carefully worked out, with very definite recommendations as to what should be done, along the following lines:

- (a) Medical
- (b) Psychological and psychiatric
- (c) Educational
- (d) Social.

WHAT IS A SOCIAL EXAMINATION?

That phase of the clinic study which is designated a social investigation—is a record as complete as can be gotten of the child's environment, the stock from which he springs, and the child's own developmental career. It contains an account of the personalities that make up the little world in which the child lives. It describes not only the physical make-up of the home, but what is of more importance—its atmosphere, —intellectual, moral, religious and social. It is intended to show the influences, hereditary, environmental, health, educational, etc., that have operated to make the individual child what he is. It gives an account as complete as can be gotten of the life career of the individual—his entire developmental history—from birth up to date. The social investigation made by a psychiatric social worker differs from that

usually made by other social case workers, in the special emphasis it lays upon facts related to the mental and physical development of the child himself; of his family; or his immediate ancestry and of the personality and mental attitude of the individuals who make up the world that surrounds the child. It seeks to record the inter-play of these personalities, and to find there, as well as in the concrete, evidences of care and neglect that the home affords, the causes of unhappiness and maladjustment.

WHY IS A PHYSICAL EXAMINATION MADE?

That the physical health of the individual greatly influences his life adjustments or his behaviour—there is now no one to question. That the great majority of all problem children present, in addition to a great many other vital factors needing attention, mild or serious physical conditions, we already know. The wisdom of determining the presence or absence of heart disease, tuberculosis, kidney conditions, diseases of the ductless glands, syphilis, and many other serious physical disorders needs no discussion.

WHAT IS A PSYCHOLOGICAL EXAMINATION?

It is the application of standardized mental tests to the determination of the intellectual abilities of a given child. The psychological examination is given in order to determine the mental development of a child, measure his educational progress, and discover special abilities and disabilities. The mental development and the various abilities and disabilities of an individual child are measured in relationship to the same abilities of other children of the same age. This has been made possible from the results obtained by psychologists in the examination of large numbers of children of various ages, races and nationalities. And it has thus been possible to ascertain with a high degree of reliability, the mental endowments, the educational progress, and the abilities, as well as the disabilities, of an individual child.

WHAT IS A PSYCHIATRIC EXAMINATION?

Unlike the psychologist who seeks to measure mental capacities, the psychiatrist has mainly in view a study of the way in which the mind works. He seeks to get a picture of the child as a living and adjusting personality, of the child as a whole, and not any special phase of his make-up. It is the duty of the psychiatrist to analyse the entire case record, putting together all the facts in the case in their bearing upon the personality make-up of the child and the forces from within that have seemed to make him behave as he does. In addition to the picture of the child's make-up that the psychiatrist gets from analysing the social

investigation, the physical examination, the psychological and educational studies, he adds that most valuable contributions secured from the child himself—an account of his inner mental life, his own view of his personal experiences, his own attitude towards himself, his associates, his parents, brothers and sisters, other relatives, teachers, etc., his own account of his behaviour and motives for such. The psychiatrist seeks to get a free, full and frank account of the child's inner thoughts, and his own personal way of dealing with his instinctive life. In making such a study the psychiatrist discovers unhealthy attitudes, morbid trends, mental conflicts, pathological personalities, and even serious nervous and mental disorders and defects. Above all, however, the psychiatrist in this way understands how the child's mind works, and comprehends the processes and mechanisms that the child uses in adjusting himself to life situations.

HOW DOES THE CLINIC MAKE USE OF THIS INFORMATION FOR THE BENEFIT OF THE CHILD AND THOSE RESPONSIBLE FOR HIS GUIDANCE?

After the initial study of a given case has been completed, a staff meeting, including every member of the clinic's personnel, as well as the referring social workers, or visiting teacher, or probation officer, is held. At this time every item in the entire study is carefully gone over. A summary report of all findings is made which includes an evaluation of all of the various causative factors within and without the child that have contributed to the child's behaviour and difficulties in adjusting himself. Finally, the very object of the entire study, and the sole reason for the examination—which is the programme of treatment recommended, is now carefully taken up. This is outlined under four specific headings:

- A. Medical
- B. Psychiatric and Psychological
- C. Educational
- D. Social.

An effort is made to be specific, concrete, and practical in these recommendations.

The most important phase of the entire clinic's programme—the follow-up and treatment end of the work—is now reached. Through the social service department of the clinic, every effort is made to assist, stimulate, encourage and inspire the referring workers, or persons concerned with the child, to do the best possible psychiatric case work in each given case, and to keep in the very closest touch with the clinic's staff for weekly and monthly conferences on what is accomplished in treatment. New and improved programmes are worked out from month

to month as the case progresses. It is absolutely fundamental that a child guidance clinic have an adequate psychiatric social service staff of its own, if it is to function satisfactorily with schools and various agencies in connection with the follow-up end of the work. This in no way relieves the social agencies, probation officers, visiting teachers and others from their full responsibilities in connection with a given case, but it makes possible a clinic that is a real guidance enterprise rather than a dispensary service.

IS THE CO-OPERATION OF SOCIAL AGENCIES, SCHOOL TEACHERS, PROBATION OFFICERS, MEDICAL MEN, AND HOSPITAL, IMPORTANT IN TREATMENT?

If this one thing is borne in mind, that a Child Guidance Clinic is a community-wide organization,—created for the adjustment of problem children, who by the thousands become our social problems in the future,—and is not a psychiatric dispensary to classify mental cases—it can then be seen how such an enterprise enters into every fibre of the social facilities of a city. If its aim is the adjustment of problem children, then it must use every tool available in a community to carry out such adjustments. This means specialized educational measures, the very best social case work, child placing and family agencies, most approved probation methods, modern recreational facilities, Boy Scouts, and other like resources. The whole question of success in the adjustment of a given case, through the agency of such a clinic, is going to be measured by two things—the extent of development of these community resources, and the ability of the clinic to utilize them. Every worth-while resource in the city that can be used in child welfare work should be tied up in some intimate way with such a clinic.

HOW IS A COMMUNITY TO BE MADE ACQUAINTED WITH THE SIGNIFICANCE OF SUCH A MOVEMENT AND THE EXISTENCE OF SUCH AN ENTERPRISE?

A child guidance advisory committee should be appointed in each city. This committee should be composed of influential persons representing the public schools, the various social agencies, the medical profession, the Department of Public Welfare of City, clubs and various welfare organizations, Chamber of Commerce, leading newspapers, etc. Such a committee should make a study of the need of a child guidance clinic, and should develop a programme in which all of the social facilities of the city should play a vital part,—the child guidance clinic being more or less an advisory and consulting centre in the cases of individual problem children. This committee should carry on a constant stream

of education before various clubs and organizations. When the child guidance clinic has been established, this committee should become the Advisory and Administrative group in charge of the enterprise. It should, through its continuing study of the needs of the clinic, and the community, seek to develop the work along the soundest and safest lines. The Child Guidance Clinic staff, through its Advisory Committee—which also represents the schools, social agencies and other bodies in the city—will be able to work effectively through these resources in its programmes for problem children. This close relationship maintained with other bodies that must be used as adjustment resources, will enable the Clinic to act as a training centre along mental hygiene lines for school teachers, social case workers and others.

HOW CAN A CITY SECURE AID IN DEVELOPING A CHILD GUIDANCE CLINIC ALONG THE MOST MODERN AND APPROVED LINES?

A special Division within the National Committee for Mental Hygiene, has been created for the purpose of administering that phase of the Commonwealth Fund Programme, which is concerned with psychiatric or child guidance clinics. This Division, under the direction of Dr. V. V. Anderson, maintains for cities interested in the development of psychiatric and child guidance clinics, two types of clinical service:

- A. "Demonstration Clinics"
- B. "Consulting Field Service"

The Demonstration Clinic Service, maintains two large clinics,—staffed by psychiatrists, psychologists, psychiatric social workers and statistical and clerical forces. These clinics remain approximately one year in a city, and then move to another demonstration centre, and are only available to the very largest cities where the best social facilities may be utilized in conducting a model demonstration. The object is to plant only a few demonstration centres in the country—hoping to develop in these centres a type of work that will stand out as an object lesson to other cities. One of the conditions laid down for cities receiving the demonstration service is that the period of demonstration shall be followed by a permanent clinic locally financed. These clinics must be adequately maintained with a minimum annual budget of at least \$25,000. Properly trained personnel must be secured and close relationship to the various agencies mentioned above, maintained. It is expected that the Director of the permanent clinic shall have some relationship to the teaching faculty of the university in cities chosen.

These demonstration clinics not only demonstrate the methods employed in the adjustment of problem children, showing just how the

job is done, but also concern themselves with the organization of a community's facilities to work properly in a unified scheme with the permanent clinic. The demonstration staff, in co-operation with the central office of the Division, helps in the choice and training of the personnel of the permanent clinic.

The Consulting Field Service is available to cities, large and small, that, though not being able to receive the larger demonstrations, still wish to go ahead in the development of their own clinics and wish aid and advice in the organization and operation of such. This consulting field staff will remain from three to four months in any city. It will assist in the assembling of personnel and getting the clinic work under way, in perfecting its organization and its relationship to the community, in laying down sound clinical and social case methods, and carefully nurturing along the most approved lines the undertaking until it has achieved a safe development. No city will receive such consulting service that is not already prepared to finance some sort of clinical work and seeks aid in the establishment of such. A minimum budget of \$15,000 is deemed necessary for child guidance clinics in smaller cities.

The Relation Between Maternal Mortality and Infant Mortality*

DR. HELEN MACMURCHY

Chief Division of Child Welfare, Dominion Department of Health

Mr. President, Ladies and Gentlemen.

We all wish to congratulate you, Mr. President, on the opening of this Congress, where the Medical profession, the general public, and the Health Officials, Municipal, Provincial and National, meet on common ground to consider their several duties and responsibilities in the field of Public Health, and to learn from one another.

It is expected of us, at the present moment, that we shall lay aside ponderous text-books and lengthy statistics in favour of the more popular newspaper, magazine and novel. Well then, for example, here is a column from the Book Review page of the "Time and Tide" for May 1st, 1925, page 424. "Time and Tide" is Lady Rhondda's paper. She founded it. It is well edited, extremely modern, and not at all behind the times. It is clear, able and interesting, like Lady Rhondda herself.

"*Love*. By the author of 'Elizabeth and Her German Garden'. Macmillan, 7s. 6d.

The George and the Crown. By Sheila Kaye-Smith. Cassell & Co., 7s. 6d.

In each of these novels the heroine dies in child-birth. Here is the conclusion of the review: "This and how much more is told graciously, fluently, touchingly and with how much narrative ease. I cannot help wishing, however, that both these admirable writers, with their rich and different talents, had not introduced death in child-birth into these two novels. In life these most pathetic of all deaths are, happily, exceedingly rare!"

Is the death of a mother in child-birth "Happily, exceedingly rare"?

The Times, of July 2nd, 1924, says: "The high childbed mortality in England is one of the darkest blots on our Health Record." What is the Maternal Mortality in England? It is 3.8 per 1,000 living births.

*Read at the Annual Meeting of the Canadian Public Health Association, Montreal, June, 1925.

What is it in Canada? It is 6 per 1,000 living births. You will find it so stated in the "Preliminary Vital Statistics for 1924", issued on May 26th, 1925, by the Dominion Bureau of Statistics of the Department of Trade and Commerce at Ottawa. This, of course, refers to our Registration Area, which is for eight provinces only. The Province of Quebec has also passed a "Vital Statistics Act", but it has not yet come into force.

The general death-rate, as given in these Preliminary Statistics is favourable, being 9.8 per 1,000. In other words, of every 1,000 people in these eight provinces on January 1st, 1924, 990 were alive on December 31st, 1924.

How many died in 1924? 65,682. How many died in 1924 under one year of age? 12,282. How many died in 1924 of old age? 2,545.

939 mothers died in the early prime of life in 1924. 343 of these mothers were from 20 to 30 years of age. 435 of these mothers were from 30 to 40 years of age.

Compare our Maternal Mortality of 6 per 1,000 living births with our General Mortality of 9.8 per 1,000.

Our Maternal Mortality is too high. It is not "exceedingly rare". This is a problem of Public Health and Preventive Medicine.

Puerperal Morbidity

The causes of Maternal Mortality are the same as the causes of Maternal Morbidity. Where one mother dies—probably about ten do not make the perfect recovery which they should make. And it is plain that the mother's ill-health, preventing her from giving the maternal care and breast-nursing to the baby that she otherwise could, must be an important cause of Infant Mortality.

Nursing at the Breast and Mother's Care Make the Difference

The baby nursed by the mother generally lives and thrives.

One of the latest publications of the U.S. Children's Bureau, Publication No. 142, entitled "Causal Factors in Infant Mortality", by Robert Morse Woodbury, Ph.D., Chief of the Division of Statistical Research, is a valuable publication. The U.S. Children's Bureau secured about 23,000 records of births, with certain information about the mother and baby, from the following eight cities, Johnstown, Pa., Manchester, N.H., Brockton, Mass., Saginaw, Mich., Waterbury, Conn., New Bedford, Mass., Akron, Ohio, and Baltimore, Md. Total number of births 22,967, or say 23,000. Of these babies 2,555 died before they were one year of age, an Infant Mortality Rate of 111 per 1,000.

Our Infant Mortality Rate is probably a little below 100 per 1,000 for 1924, for the whole of Canada. Here is what Dr. Woodbury says about Maternal Mortality among these mothers, that is about the deaths of these

mothers at or near the time of child-birth, and from causes connected with child-birth (page 33).

"The number of live-born infants whose mothers died at or during the year following confinement was only 0.6 per cent. of the total number, that is 6 per 1,000.

"Among these infants a very high mortality prevailed, 450 per 1,000 live births, one nearly as high as that for the prematurely born, and over four times as high as that for babies whose mothers lived for a year or more after their birth.

"Of the infants whose mothers died within one month after confinement—in most cases probably from causes connected with pregnancy or child-birth—a considerably larger proportion failed to live until their first birthday than of the infants whose mothers died between one month and one year after confinement, the infant mortality rates being respectively 607 and 367." Pages 33-34.

SUMMARY (Page 37)

"In cases in which the mother died during the year following confinement, in most cases as a result of a condition that originated before the infant's birth—the influence of the mother's ill-health appeared:—In high rates of premature birth; Of death within the first month; And of deaths from causes peculiar to early infancy.

These high rates were especially marked in those cases in which the mother died at child-birth,—or within the following month—almost all from puerperal causes."

"Of the infants whose mothers died a very large proportion were artificially fed from birth, owing chiefly to the death of the mothers—or to health conditions which prevented them from nursing the children."

That is, while the total Infant Mortality was 111 per 1,000 living births—

If the mother dies before the baby is one year old, then the Infant Mortality is 450. per 1,000 living births.

If the mother dies before the baby is one month old, then the Infant Mortality is 607. per 1,000 living births.

If the mother dies when the baby is over one month, but under one year, then the Infant Mortality is 367. per 1,000 living births.

SUMMARY

1. There is a general causal relationship between Maternal Mortality and Infant Mortality. If the mother dies, her baby is very likely to die too.

2. There is also a causal relationship between Maternal Morbidity and Infant Morbidity and Mortality. If the mother is delicate and ailing she is not so well able to nurse her baby, and Infant Mortality and Morbidity are far greater among artificially nursed infants than among those nursed by the mother.

3. The general public does not understand how serious our Maternal Mortality is. Even Dr. Woodbury says that "The number of live-born infants whose mothers died at, or during the year following confinement was only 0.6 per cent. of the total number". Only 0.6 per cent. But 0.6 per cent. is 6 for every 1,000 living births, and that is a very high rate. It should not be more than 1 in every 2,000 living births. Many family physicians in Canada have attended at 2,000 births and never lost a mother.

Radio Talks

What Social Hygiene Means

Prepared for the Canadian Social Hygiene Council, and delivered by Dr. Gordon Bates, at CKCL Broadcasting Studio, Toronto, July 14, 1925

THIS is the first in a series of addresses to be given through the courtesy of CKCL by speakers representing the Canadian Social Hygiene Council. My task to-night is to speak on the subject, "What Social Hygiene Means".

Everybody realizes that now-a-days there is a wide interest in all matters concerning the health of the public. The elimination of disease, the conservation of health, the prolongation of life; these are subjects which are worthy of discussion, and which are discussed more and more. During the last fifty years, since the discoveries of Pasteur upon which modern bacteriology and preventive medicine are based, this has been increasingly true, largely because with the information made available by Pasteur's discoveries we have been able to attack disease intelligently.

As a result the direct attacks on diphtheria, small-pox, scarlet fever, typhoid fever, yellow fever, malaria, venereal disease, and a host of other diseases have to a large degree been successful. An understanding of the exact mode of transmission of these diseases has made it possible to develop measures which in the long run will stamp out disease altogether.

Measures for the direct control of disease have been known as public health measures, and governments and municipalities throughout the world have organized public health departments to put into effect various measures for the organized prevention of disease.

Properly speaking, Social Hygiene is a development of public health. The term seems to have been first used in England, or on the Continent, about the beginning of the present century. It included, and in Europe still includes, the whole of public health, but goes further in that it recognizes the fact that social organization and the manner in which people live affect health.

Perhaps you have noticed the increasing amount of attention which is being paid to such subjects as the feeble-minded, eugenics, birth control, the venereal diseases, the problems of divorce and marriage. All of these questions have to do with individual and social health. A high divorce rate means improper preparation for marriage, as a high venereal

disease rate implies the lack of training for young people in what may be called racial responsibility. Similarly the birth of defective children may well imply the lack of care for the race on the part of society. These are only some of the problems which form the task of social hygiene.

We have widespread disease, we have early death, we have misery, we have poverty, we have marriage for improper reasons, under improper conditions, and without safeguards, death and diseased progeny resulting; and side by side with these conditions we have ignorance of conditions as they exist on the part of the public, as well as general ignorance of the steps which should be taken to set matters right, to create a world in which the aims and ideals of the social hygiene movement have been fulfilled.

The aim of social hygiene is to create a finer, happier, nobler race. The means whereby that ideal may be achieved must be through the work and interest, not of a few enthusiasts, but of the average men and women.

Sir Francis Galton, the founder of the much misunderstood science of eugenics, said somewhere that eugenics would not succeed until people embraced it as they would a religion.

Social Hygiene, considered as a science, includes eugenics, but the same statement is applicable to it.

Social Hygiene in its final analysis is the science of right living, the hand maid and companion of religion. Religion touches the springs of action and of conduct, inculcates morality through idealism, is concerned with the health of the mind, the purity of the soul.

Social hygiene deals with the physical fitness of the individual and the race; it is concerned with action arising from conduct, because on habit and conduct are founded the ultimate health and fitness of the person and the race. Social hygiene blazes the trail toward a right living of life and a right expenditure of life's forces, not because these are moral (in the ordinary acceptance of the word), but because on such right living and such expenditures alone must depend the attainment of the highest standards of physical and mental health in men and women.

Social hygiene attacks the problem of right living from three positive angles. First, the health of the individual as this affects that individual and his or her potentialities for a happy, healthy, efficient life. Second, the health of the individual as this affects the family, society and the race. Third, the community aspects of diseases which afflict the individual, destroy health, and damage society.

In the past social hygiene has been most concerned with the third aspect of its problem, because it has had to deal with the tragic results of ignorance of the rules of right living, or a wilful disregard of these rules.

Venereal diseases have been attacked because these are deadly social plagues, and race killers. It was necessary to show society that these were not less, but more important as public health problems, than tuberculosis or cancer, and that society must protect itself against them, or fatally deteriorate.

To-day social hygiene is concerned, not alone with this curative, prohibitory angle of its problem, but with all the fundamentals incident to the attainment of personal and community health.

Education of the individual and society is its greatest task to-day, and nothing daunted by the fact that such education must cover a field touching on all public health problems, on eugenics and on innumerable angles of social reform, it is forging ahead as the teacher of the race, the hand maid of religion in the inculcation of a practical method of right living.

A word as to the specific programme and achievements of the Canadian Social Hygiene Council. This voluntary organization came into being in 1919, as the result of a conference called by the Dominion Government to consider ways and means for controlling the venereal diseases—diseases which as a cause of misery, disability and death outrank all other diseases, and at first the organization was known as the Canadian National Council for Combating Venereal Diseases. A conception of the necessary broader functions of the Council forced the change of name in 1922.

The Council has organized fifty branches in various parts of Canada, and has been largely instrumental in keeping public opinion behind the venereal disease prevention programme carried on by the Dominion and provincial governments. This programme has included the operation of no less than seventy free treatment centres in Canada. Last year about 350,000 free treatments were given in these centres, and nearly 30,000 new cases were reported as having been brought under treatment.

This venereal disease prevention programme is very important, not only because a great new field of preventive medicine is being covered, but because it is the one field in which the Dominion and provincial governments co-operate for disease prevention. In this particular work over two million dollars has been expended since 1919—half being contributed by the Dominion, half by the provinces. Were it not for the existence of the Social Hygiene Council this programme would have fallen to pieces long ago.

The Social Hygiene Council considers the maintenance of Dominion leadership in the health field an essential for the health programme.

The Social Hygiene Council, as I have said, has branches in various parts of Canada. It works in co-operation and with the approval of

Dominion, Provincial and Municipal health departments. It is supported by means of grants from governments and subscriptions from individuals, and membership fees in its local branches.

The object of the local branches is community organization. The doctor, the lawyer, the teacher, the newspaper editor, men and women, parents and prospective parents, are brought together to discuss and organize, to find what each can contribute to the health problems of their community.

The object of the Social Hygiene Movement then is health, individual and social. The Social Hygiene Movement is a citizens' movement, inaugurated for the good of the people generally. It can succeed and achieve results only in so far as it is supported by the people. For that reason I have no hesitation in asking for all the co-operation possible from all of my listeners, in any part of Canada, or for that matter in the United States, for there is a social hygiene movement there too.

I urge of you to enquire further, to listen in on all of the Social Hygiene addresses which will be given during the coming weeks, and to do all you can to help this greatest of all health movements grow.

The headquarters of the Canadian Council are at Hygeia House, 40 Elm Street, Toronto, Ontario, and visitors and enquirers are welcomed at all times.

Parental Responsibility

Prepared for the Canadian Social Hygiene Council, and delivered by Professor Peter Sandiford at CKCL Broadcasting Studio, August 4, 1925.

THIS is the fourth of the series of talks given through the courtesy of CKCL, by speakers representing the Canadian Social Hygiene Council. My talk to-night is on "Parental Responsibility".

No child asks to be born. Helpless when he comes into the world, the baby requires love and care for many, many years. Most parents, fortunately, realize their duties towards children, and few, if any, are consciously cruel to them. But few parents, without special training for the office, can make the most of nature's varied gifts to their children. They spoil them, as we say, frequently through mistaken kindness, but always through ignorance. If they knew better they would act more wisely.

When the baby is born he can do some things that are necessary for life. He can digest, excrete, breathe and pulse the blood through his body. Nature takes good care of these physiological actions. He can also grasp quite strongly with his fingers, suck the life-giving milk of his mother, and howl, partly for exercise and partly to make his wants known. A little later he crawls, stands, walks, talks, climbs, and is active in a thousand and one ways. As he learns to walk and talk he becomes more fearful of things which never troubled him before—of the dark, for instance. Still later he begins to hoard and collect things, take a lively interest in machinery and books of adventure, and finally during adolescence he becomes conscious of sex in a way that he never was before. Most of these activities have an instinctive basis, which is another way of saying that Nature built him that way.

But it is with instincts as a basis that habits are formed, and the sum total of our particular habits we call our characters. Since instincts are most prominent in early life, it is the training then given that makes or mars children. The latest psychological researches point to the conclusion that our characters are formed for the most part during pre-school years, that is, up to six years of age. Since the child is normally in the home with the parents as teachers, chiefly the mother, the responsibility of parents for the formation of the characters of their children is overwhelmingly great.

Practically the whole of the law and the prophets in regard to child-training can be summed up in the one word, habit. Habit is the tendency to repeat what one has done before. Once we do a thing we form a preferred path in our nervous systems, which makes it easier than before to do the same thing again. We can actually develop not only habits of acting, but also habits of thinking and feeling in certain ways. Habits in regard to the care of the body—eating, sleeping, eliminating, bathing—are easily formed. Every good mother trains her child in these habits in the first two or three years of life. Our manners are a collection of habits, we do boorish or courteous actions without stopping to think. And every good parent trains her child to be courteous and mannerly. Our habits of dressing, speaking, writing, spelling, doing arithmetical computations, playing the piano, riding a bicycle, running a typewriter, skating, swimming, using tools, tying knots, using table implements, playing games, are some of the commoner habits children learn.

Not only are the more obvious things listed above to be counted as habits, but most of our morals as well. We form habits of telling the truth or of lying in exactly the same way as we learn other habits, and just as easily. Our attitude toward the drinking of alcoholic liquors, or the taking of others' property, or the problem of sex, as well as our

attitude towards other people, whether sincere or deceitful, friendly or antagonistic, are largely the results of habits of thinking formed in early life. Most of our prejudices have a similar basis. Racial and religious differences in the world can be traced to bad habit training in the home. Kindness and consideration for others, especially for the less fortunate, instead of cruelty and selfishness, are also matters of home training.

In all this habit training there is one golden rule for parents to follow. All other rules, and there are many, are subsidiary to it. Psychologists, like myself, call it the law of effect. It runs as follows. Encourage and reward the good impulses of children; discourage, prevent and punish the bad. And by punishment I do not necessarily mean spanking, although as a parent I would be the last to leave it out when children are young. As they grow older other methods should, nay must, be used. If parents asked themselves, what am I encouraging, that is, what habit am I forming by this particular line of conduct, there would be far more happy people in the world than there are to-day. Think out a careful line of action and stick to it. Take the following fairly common incident in child life as an example. A child around three years of age usually develops a fear of the dark, and asks that the light be kept on. What should the mother do? Mistaken kindness prompts her to give way to the natural fear of the child. But providing that the fear is not pathological, that is, unnaturally excessive, the best way is not to leave the light on. For if the light is left on once, it is certain that it will have to be left on again. The child forms a habit of sleeping in the light, which is very difficult to break. The wise parent, without fuss or worry, builds up the good habit of sleeping in the dark. She says that children who shut their eyes can't see the dark. "Everything's all right, I'm not far away. Shut your eyes tightly and before you know what has happened it will be morning". And so it is. The normally constituted child soon loses all fear of the dark. If, unfortunately, the child has been made afraid by some foolish grown-up, or by reading some exciting literature, the cause of the trouble must be discovered and removed. The healing process is sometimes lengthy, but every victory of the child will help him to win others. Nothing succeeds like success in habit formation.

In the same way the modern mother, after attending to the evening wants of her baby, puts him in the crib and leaves him. Generally he goes to sleep. If he cries, she first of all lifts him to get rid of possible wind, and puts him down again. She never rocks him or pats him to sleep. If she is sure there is nothing the matter with him, except a desire for her company, she lets him cry, and after a night or two there is no more of it. It isn't easy to let a child cry. Our whole natures

cry out to go and soothe him. But if we once give way we shall be rewarding a bad impulse and forming a bad habit in him. Certain it is that if we do it once we shall have to do it again. And so for all other habits, the action which is rewarded determines the habit which is formed.

There is one instinct, the most powerful and urgent that we have, which social hygiene makes its special object of study. This instinct is sex. In the past parents have treated this instinct as non-existent in young children, but even the most casual observation shows that it has its beginnings in very early life. There is no instinct in children which is more urgent for some form of expression, and none to which society, the family, and the individual will allow less freedom. Sex has been taboo in the past; it has been surrounded with an atmosphere of hush and silence, with most disastrous results to the individual and the race. The widespread presence in our land of venereal diseases, illegitimacy, prostitution, divorce, as well as minor sexual maladjustments, are proofs of the ghastly failure of our present policies. I know that there are many parents who are so ostrich-like that they believe that *their* children, at least, will remain innocent and pure, if only nothing is done to enlighten them. Facts, unfortunately, are against them. The chances are that if children do not acquire sex knowledge from a pure and reliable source, they will get it from an impure, unreliable one—from other children in school or on the street, or from even more tainted sources.

The very fact that sex as a subject is generally tabooed in the presence of the child accounts for the intense curiosity which many children develop at an early age regarding the subject. All too frequently the natural desire of the child to be enlightened on this subject, as on any other, is met with a cold reserve, a shamed evasion, or a lying answer from parents who, in every other way, are kind, truthful and considerate. If the child of five asks where babies come from, and is told by the parent that the stork brings them, or the doctor brings them in a black bag, a fair distance has been covered along the disastrous road of loss of confidence in parents. For sooner or later the child will discover that a lie has been told, and he will never willingly go to the lying source for other information he may desire. What the parent should and must do under the circumstances is to allay the natural curiosity of the child within the limits of his understanding. Say too little rather than too much, but in all events allay the curiosity. There is no need to go into a mass of details far beyond his mental grasp. Go slowly and frankly from day to day, meeting the questions as they arise with thought and consideration. Later, around the age of ten, it will be necessary to give more positive information about the changes that will come to them. Mere instruction, however, is not enough. The wise mother provides loose and hygienic

clothing for the children, and helps them to develop healthy habits of living. She provides simple, healthful, non-stimulating food. She insures that regular habits of evacuation are formed. The beds she provides for her children are hard. Her children sleep in well-ventilated rooms, and on awaking in the morning habitually arise and relieve themselves. Every day her children play in the open air, and retire to sleep weary and content. Her children take daily baths in cold or tepid water, and their bodies become hardened to change.

All instincts can be sublimated, that is, redirected into higher and nobler channels, but none so beneficially as sex. Boys can be trained to be reverent and chivalrous towards girls; girls can be trained to be natural, yet modest, towards boys. Good literature is very helpful here. Parents should direct their children's reading. If they lack the knowledge consult a librarian, or one of the many good graded lists of children's books.

Every normal boy wants to be strong and virile; every normal girl wants to be attractive. These ideals may be made into the most potent forms of appeal, especially to the adolescent boy or girl. Strong, happy and healthy children are the precursors of good parents and a noble race. And good virile boys and girls are those in whom right habits have been developed.

The task of training in right habits is long and arduous, but we must remember that Rome was not built in a day. If parents start right and accept their responsibilities, the next generation will be purer and stronger than the one to which the parents of to-day belong.

This talk has been given by a representative of the Toronto Social Hygiene Council. The Council has a number of speakers who are ready to address meetings of parents, of young men and of young women, on Social Hygiene subjects. Will you remember this in making your lecture programmes for next winter. For further information write to Mr. A. D. Hardie, Hygeia House, 40 Elm Street, Toronto, or telephone him, Adelaide 6785.

Notes on Current Literature

From the Health Information Service, Canadian Red Cross Society,
410 Sherbourne Street, Toronto

The Eyes of the Pre-School Child

By James Kerr, M.D., late School Medical Officer, London, England.
"Child Health Bulletin", June 1925, page 25.

Rural School Nursing

The United States Bureau of Education has issued a pamphlet, Health Education No. 17, entitled, "Helps for the Rural School Nurse". This pamphlet gives suggestions for organization of work, development of the year's programme, co-operation with physicians, teachers and parents, and an outline of technical information which the nurse may give to teachers.

Playground Apparatus

Homemade Playground Apparatus at a Country School. By C. J. Storey, of the Russell Sage Foundation. "Public Health", Michigan, June, 1925, page 179.

Vectors of Infection

A popular article on the spread and control of communicable diseases. "The Nation's Health", July 15th, 1925, page 460.

The Prevention of Smallpox

By Dr. A. A. Cairns, Department of Public Health, Philadelphia. "Monthly Bulletin of the Department of Public Health of the City of Philadelphia", May, 1925, page 56.

Smallpox in Detroit

A review of the smallpox epidemic in Detroit in 1924. "City Health", April-May, 1925, page 3.

Bovine Tuberculosis

An address on bovine tuberculosis and its relation to public health. By E. C. Schroeder, Superintendent of the Experiment Station of the United States Bureau of Animal Industry. "Child Health Bulletin", June, 1925, page 32.



The Provincial Board of Health of Ontario

COMMUNICABLE DISEASES REPORTED FOR THE
PROVINCE FOR WEEKS ENDING JULY 4th, 11th,
18th, 25th, 1925

COMPARATIVE TABLE

Diseases	1925		1924	
	Cases	Deaths	Cases	Deaths
Cerebro-Spinal Meningitis .....	...	4	2	...
Chancroid	1	...	...	...
Chicken Pox	330	...	179	...
Diphtheria	151	19	220	12
Encephalitis .....	...	10	1	1
Gonorrhoea	144	...	124	...
Influenza .....	...	5	...	2
German Measles	6	...	28	...
Measles	642	...	1645	8
Mumps	108	...	141	1
Pneumonia .....	...	77	...	68
Poliomyelitis	4	...	...	...
Scarlet Fever	252	3	267	3
Small Pox	8	...	7	...
Syphilis	65	...	45	...
Tuberculosis	158	82	137	60
Typhoid	57	3	77	4
Whooping Cough	345	9	109	4

The following municipalities reported cases of Small Pox: Trenton 3, Arthur Village 3, Kingston 1, Moore Tp. 1.

JOHN W. McCULLOUGH.

Canadian Social Hygiene Council

NEWS NOTES

An interesting experiment of the last few months in Toronto has been the holding of conferences for mothers, and the establishment of a bureau which may be consulted by fathers and mothers. Attendances have been small up to the present, but parents who have taken advantage of these opportunities have been very enthusiastic.

Arrangements have been made with CKCL Broadcasting Station, Toronto, for a weekly lecture on Social Hygiene. These lectures, which are being received with interest, started on July 14th, and are delivered every Tuesday evening, at 7.45 p.m. Two of the lectures are printed in this issue of the Journal; others have been given by Dr. G. D. Porter, Professor D. R. Keys, the Rev. L. Minehan, and Dr. L. A. Péquegnat.

The Social Hygiene Council is showing activity in various parts of the Dominion. Dr. L. A. Péquegnat, Eastern organizer, has been in Nova Scotia and New Brunswick, where he has addressed the Medical Societies, and has done much to rouse active interest in the Council's work. Dr. Murray G. Thomson, Western organizer, is in Winnipeg, where he is organizing study groups on Venereal Disease, and Miss Eileen O'Brien has started work as Secretary of the Montreal Social Hygiene Council.

Miss Eileen O'Brien was appointed last month to the staff of the Council. She holds the Hygiene Diploma of the University of London, and has passed the examinations of the Central Midwives Board. She served for three years as a Sanitary Inspector, and during the war worked in Serbia and Czecho-slovakia. Since that time Miss O'Brien has served the League of Red Cross Societies, and has worked and studied in various European countries and in the United States.

Dr. Thomson was present at the Group Leaders' Summer School Camp of the Manitoba Boys' Work Board last month, and lectured on "Character Training for Boys and Girls". Mr. A. D. Hardie, Educational Secretary of the Council, was similarly present at the Ontario Boys' Work Board Camp, at Beausoleil Island. These lectures were received with interest, and should ultimately prove of benefit to the boys who are helped by the Provincial Boards.

The Council has issued a leaflet explanatory of its work, for free distribution at the Canadian National Exhibition and elsewhere. The Toronto Council has prepared a booklet containing a programme of its work for the coming winter session. Copies of these may be obtained on application to the Council's Headquarters, at 40 Elm Street, Toronto.

October 5, 6 and 7 are the dates for the Imperial Social Hygiene Congress at Wembley. The Canadian Council will be represented.

Sir Auckland Geddes, former British Ambassador to the United States, has accepted the presidency of the British Social Hygiene Council. As Sir Auckland Geddes is already president of the Society for the Prevention of Venereal Disease, it is anticipated that, if the present efforts are continued and extended, venereal diseases in England will be reduced to a minimum.

It is significant that the main point of difference between these two organizations was adjusted by the report of Lord Trevethin's Committee relative to the use of personal prophylaxis in the prevention of venereal diseases. In this connection the London Correspondent of the Medical Journal of South Africa writes:—"From a medical point of view prevention is better than cure, and the majority of medical men would probably approve of personal disinfection as a sensible precaution. Not only does such a course lessen the risks of the person who exposes himself to infection, but it is also a safeguard against the direct inoculation of others, more especially spouses and children"—Health News, United States Public Health Service.

Medical and social leaders of France are stressing the demand that expectant mothers should have adequate medical care, and that, therefore, it is essential to make compulsory the early notification of pregnancy, so that venereal affliction, when present, may be detected and the coincident danger to the unborn child prevented. It is not sufficient to protect the child only from the moment of its birth, as, according to Prof. A. Couvelaire, of the Baudelocque Hospital of Paris, 41 per cent. of the deaths of infants during pregnancy are due to syphilis. There is considerable evidence that the number of such deaths may be greatly reduced by timely examination and care of expectant mothers. Similarly the Conference of Venereal Disease Control Officers of the State Health Departments and the United States Public Health Service, held at Hot Springs, Arkansas, in December of last year, urged that special attention

to all details should be given in the "treatment of women, because of the possibility of the transmission of the disease to the child".—Health News, United States Public Health Service.

A recent report of the Vienna Marriage Consultation Bureau, a sub-department of the municipal public health service, shows that 18.7 per cent. of the persons applying to the Bureau for information and advice are infected with a venereal disease. The Bureau, upon recent completion of two years of evidently successful service, is of the opinion that the value of the service rendered by it is in the dissemination of proper information concerning venereal diseases, and the serious danger of marriage in such cases. In the United States, according to the U.S. Public Health Service, seven states require a medical certificate before marriage, and fourteen states, while without such a requirement, have laws which aim to prevent venereal disease infection through marriage.—Health News, United States Public Health Service.

Book Reviews

Acknowledgment is made of the receipt of the following books for review. Reviews of these books will appear from time to time.

"Bacteria in Relation to Man", by Jean Broadhurst. Published by J. B. Lippincott Company, Montreal, 201 Unity Bldg. Price \$3.00.

"The Baby's First Two Years", by Dr. Richard M. Smith and Mrs. Henry Copley Greene. Published by Houghton Mifflin Company, Boston.

"Safeguarding Children's Nerves", by James J. Walsh, M.D., and John A. Foote, M.D. Published by J. B. Lippincott Company, 201 Unity Bldg., Montreal. Price \$2.00.

"International Conference on Health Problems in Tropical America". Published by United Fruit Company, Boston.

"Diabetes and Its Treatment by Insulin and Diet", by Orlando H. Petty, M.D., William H. Stoner, M.D. Published by F. A. Davis Company, Philadelphia. Price \$1.50 net.

"Industrial Poisons in the United States", by Alice Hamilton, A.M., M.D. Published by the Macmillan Company, N.Y.

"Serum Diagnosis of Syphilis by Precipitation", by R. L. Kahn, Sc.D. Published by Williams & Wilkins Company, Baltimore. Price \$3.00.

Editorial

THE CANCER PROBLEM

The recently announced discoveries relative to cancer made by Dr. Gye and Mr. Barnard, working in the Medical Research Council of England, have aroused great interest. The following statement is intended to describe in simple language what these discoveries are, and of what value they are likely to be in the control of malignant growths.

1. All cancer growths are shown by the research work of Gye and Barnard to contain a virus or group of viruses which can be grown. This applies to both the cancer and sarcoma of fowl, mice, rats, dogs and man.
2. The virus itself does not produce a tumor when injected.
3. But when injected together with virus-free extracts of tumors the virus produces a malignant new growth. The extracts contain, therefore, a substance which Gye calls the "specific factor", and which enables the virus to attack the cells of the injected animal so as to transform them into cancer cells.
4. The virus is not specific, since tumors can be obtained in one species of animal with the virus obtained from the tumor of another animal.
5. On the other hand the "specific factor" is strictly "specific". Thus in order to obtain a mouse tumor it is necessary to use the specific factor from a mouse tumor, while the specific factor of a chicken tumor is ineffective.
6. There is probably also a strict specificity of tissue for the specific factor. So far only sarcoma has been obtained, and this only with a mixture of virus, and the specific factor from a sarcoma and not from cancer.

The existence of a virus or infective agent has been proven by the microscope, and by photographs of the virus.

In order to make clearer the relationship existing between the virus and the specific factor, definite examples may be given. The virus from a mouse tumor may be called "mouse virus", and from a human tumor "human virus", and so on. Similarly the "specific factor" from a mouse cancer may be called "mouse cancer specific", from a human cancer "human cancer specific", and from a fowl sarcoma "fowl sarcoma

specific". The following results have been established:

- (a) Any virus alone from any tumor into any animal: no effect.
- (b) Any specific factor from any tumor into any animal: no effect.
- (c) Mouse cancer virus plus fowl sarcoma specific:
 - 1. Injected into mice—no effect.
 - 2. Injected into fowls=sarcoma.
- (d) Human cancer virus plus fowl sarcoma specific:
 - 1. Injected into mice—no effect.
 - 2. Injected into fowls=sarcoma.

It follows then that the type of malignant new growth that is produced depends not upon the virus but upon the specific substance. There are, therefore, two factors concerned in the cause of cancer: 1. a living virus—the extrinsic factor, and 2. a chemical substance produced by the cells—the intrinsic factor.

The extrinsic factor or virus is one common to all tumors. By itself it is incapable of producing a tumor. To do so it requires the intrinsic factor—a substance produced by the cells which enables the virus to attack the cells. The virus can be cultivated like other germs. The intrinsic factor is presumably produced by the cells in the course of chronic irritation. The intrinsic factor varies from tissue to tissue, and from tumor to tumor.

The fact that the virus cannot by itself cause the growth of cancer is a phenomenon which plays a part in many well-known bacterial infections. Thus the bacteria of gas gangrene by themselves are non-infective, but when certain simple chemical substances, such as calcium chloride are also injected, a slight lesion is produced in the tissues and then the germ of gas gangrene kills the animal. The same is true of tetanus and tuberculosis.

Of what value is this recently gained knowledge?

It has cleared the way for a rapid advance in the investigation of cancer along new but clearly defined lines which, it is hoped, will ultimately pave the way to a cure or means of prevention of this disease.

The new methods in the discovery of infective substances will be applicable to a number of diseases, the exact causes of which lie undiscovered. Diseases like measles, smallpox, encephalitis, foot and mouth disease and dogs' distemper may yield their secrets to scientific workers armed with these new weapons.

J. W. S. McC.

Literary Filth Mongers

It is now two years since the PUBLIC HEALTH JOURNAL published an editorial calling attention to the situation which existed in Canada as regards the news-stand sale of periodicals of a questionable character. The editorial pointed out that at that time Canadian news-stands were flooded by magazines of a new character, which tended to crowd out the older standard magazines, and that the moral outlook pictured by these new magazines was of such a character that it was likely to have a serious effect on the moral life of the country.

The editorial in question was widely quoted throughout Canada, and since that time many organizations have taken the matter up and effective representations have been made to the Dominion Government. As far as one has been able to learn no action has been necessary in the case of Canadian magazines, which have maintained a consistently high standard. However, it would seem from current reports that in all parts of Canada opinion is gradually rising against the circulation of magazines of this type, and that the Department of Customs, in whose hands lies the power, has given every evidence of inclination to co-operate by refusing entrance to the country of this pernicious stuff, most of which is published in the United States.

In this connection a recent statement by Hendrik Van Loon, in the *New York Commonwealth*, is of interest. This distinguished writer characterizes the magazines in question as "plain filth, masquerading as literature", and states that the country is being over-run by "a putrid stream of the most despicable, the most iniquitous, and, on the whole, the most dangerous form of a degraded variety of literature, sold and publicly sent through the mails". Mr. Van Loon echoes the sentiments of the PUBLIC HEALTH JOURNAL in the vividness and force of his language and in the sincerity of his conviction. He further points out that the pseudo-literary garbage, to which he refers, is sold in all parts of the United States, and that the attempts at censorship are a joke.

While the situation in Canada is somewhat improved, there is no doubt that there is a long way to go still before we have the clean news-stands of ten years ago, and probably before we recover from the damage which the literary filth mongers have already done us. The PUBLIC HEALTH JOURNAL suggests to its readers that while our literary advisers claim that there is danger in official censorship, the censorship of public opinion is a good thing, and that it is the duty of every good citizen to do his or her part. If parents would only take the trouble to find out what their children are reading, and encourage the good and discourage

the bad, if they would watch their neighbouring news-stands, and again encourage the praiseworthy and protest against the blameworthy, and give public voice to their opinion, the luckless purveyor of pornographic periodicals would soon find the game not worth the candle.

THE PUBLIC HEALTH JOURNAL again asks the co-operation of its readers in helping to drive worthless and dangerous magazines out of Canada, and invites correspondence on the subject.

CONTRASTS



Mother: "Now, remember, Mary, no pastry for the children! I'm very particular What Goes Into Their Little Tummies".

(Courtesy of *The Saturday Evening Post*.)

